General Relativity and Gravitation, Vol. 36, No. 12, December 2004 (© 2004)

Author Index

Abdyrakhmanov, S. T. *See* Gavrilov, V. R. 1579

Abramowicz, Marek A. Gravitation: Following the Prague Inspiration. By O. Semerák, J. Podolský, and M. Žofka (Book Review) 1507

Agresti, Juri, De Pietri, Roberto, Lusanna, Luca, and Martucci, Luca. Hamiltonian Linearization of the Rest-Frame Instant Form of Tetrad Gravity in a Completely Fixed 3-Orthogonal Gauge: A Radiation Gauge for Background-Independent Gravitational Waves in a Post-Minkowskian Einstein Spacetime (Review) 1055

Ahlers, G. *See* Lämmerzahl, C. 615

Ahluwalia-Khalilova, D. V. Addendum to: Gen. Rel. Grav. 28 (1996) 1161, First Prize Essay for 1996: Neutrino Oscillations and Supernovae (Addendum) 2183

Ahluwalia-Khalilova, D. V. Charge Conjugation and Lense-Thirring Effect A new Asymmetry 2581

Aldrovandi, R., Pereira, J. G., and Vu, K. H. Gravitation without the Equivalence Principle 101

Ali, M. Hossain. Quantum Nonthermal Radiation of Nonstationary Kerr-Newman-de Sitter Black Holes (Letter) 1171

Altaie, M. B. *See* Setare, M. R. 331

Alves, Daniele S. M. *See* Kremer, Gilberto M. 2039

Amelino-Camelia, Giovanni. Fundamental Physics in Space: A Quantum-Gravity Perspective 539

Anderson, Edward. Strong-Coupled Relativity without Relativity 255

Andersson, L. M. *See* Feenstra, L. 2317

Angonin, M. C. *See* Varvella, M. Arnaud 983

0001-7701/04/1200-2721/0 © 2004 Springer Science+Business Media Inc.

Angonin, M.-C. *See* Tourrenc, Ph. 2237

Angonin-Willaime, M.-C., Ovido, X., and Tourrenc, Ph. Gravitational Perturbations on Local Experiments in a Satellite: The Dragging of Inertial Frame in the HYPER Project 411

Apostolopoulos, Pantelis S. and Tsamparlis, Michael. Geometric Equations of State in Friedmann-Lemaître Universes Admitting Matter and Ricci Collineations 277

Apostolopoulos, Pantelis S. On Tilted Perfect Fluid Bianchi Type VI_0 Self-Similar Models (Letter) 1939

Apostolopoulos, Pantelis S. *See* Tsamparlis, Michael 47

Arbab, Arbab I. A Quantum Universe and the Solution to the Cosmological Problems 2465

Arcos, H. I. and Pereira, J. G. Kerr–Newman Solution as a Dirac Particle 2441

Arnold, Keith. *See* Fernando, Sharmanthie 1805

Arroyo, Josu, Barros, Manuel, and Garay, Oscar J. Models of Relativistic Particle with Curvature and Torsion Revisited (Letter) 1441

Ashby, N. *See* Lämmerzahl, C. 615

Balakin, Alexander B. Curvature Coupling and Accelerated Expansion of the Universe 1513

Banerjee, A. *See* Chatterjee, S. 303

Barmatz, M. *See* Lämmerzahl, C. 615

Barreto, W. *See* Herrera, L. 127

Barros, Manuel. *See* Arroyo, Josu 1441

Bhanja, Sisir. *See* Kumar De, Archan 863

Biermann, P. L. *See* Lämmerzahl, C. 615

Biswas, S. and Chowdhury, I. Fermion Particle Production in a Periodic Potential 825

Biswas, S. *See* Kamilya, S. 661

Bize, Sébastien. *See* Wolf, Peter 2351

Bordé, Christian J. Quantum Theory of Atom-Wave Beam Splitters and Application to Multidimensional Atomic Gravito-Inertial Sensors 475

Bozza, V. and Mancini, L. Time Delay in Black Hole Gravitational Lensing as a Distance Estimator 435

Brevik, I., Børkje, K., and Morten, J. P. Two-Brane Randall-Sundrum Model in AdS_5 and dS_5 2021

Brevik, Iver and Quiroga, John. Inflationary Dilatonic de Sitter Universe from Super Yang-Mills Theory Perturbed by Scalars and Spinors (Letter) 1433

Bronnikov, K. A., Chudayeva, E. N., and Shikin, G. N. Self-Gravitating String-Like Configurations of Nonlinear Spinor Fields 1537

Bronnikov, K. A., Fadeev, S. B., and Michtchenko, A. V. On Spherically Symmetric Minimally Coupled Brane Worlds 1527

Brännlund, Johan. Conformal Isometry of the Reissner-Nordström-de Sitter Black Hole (Letter) 883

Böhmer, Christian G. Eleven Spherically Symmetric Constant Density Solutions with Cosmological Constant 1039

Børkje, K. *See* Brevik, I. 2021

Cadoni, M. An Einstein-Like Theory of Gravity With a Non-Newtonian Weak-Field Limit (Letter) 2681

Camacho, Abel. Sagnac Interferometry and Non–Newtonian Gravity (Letter) 1207

Camci, U. and Türkyilmaz, I. Ricci Collineations in Perfect Fluid Bianchi V Spacetime 2005

Canfora, Fabrizio and Troisi, Antonio. Cosmological Consequences of an Inhomogeneous Space-Time 373

Carminati, J. *See* Zakhary, E. 1015

Castro, Carlos. Moyal Deformations of Gravity Via SU(∞) Gauge Theories, Branes and Topological Chern-Simons Matrix Models 2605

Chakraborty, Subenoy. *See* Debnath, Ujjal 1243

Chakraborty, Subenoy. *See* Kumar De, Archan 863

Chao Wu, Zhong. *See* Wang, Anzhong 1225

Chatterjee, S. and Banerjee, A. C-Field Cosmology in Higher Dimensions 303

Chauvet, Pablo. *See* Meléndez, Leandro 1781

Chengzhou, Liu, Xiang, Li, and Zheng, Zhao. Quantum Entropy of the Garfinkle-Horowitz-Strominger Dilaton Black Hole (Letter) 1135

Chervon, S. V., Melnikov, V. N., and Starobinsky, A. A. Preface 1509

Chervon, Sergey and Romero, Carlos. Harmonic Maps as a Subclass of Isometric Embeddings of the Spacetime in Five Dimensions 1555

Chervon, Sergey. Inflationary Cosmological Models without Restrictions on a Scalar Field Potential 1547

Chowdhury, I. *See* Biswas, S. 825

Chudayeva, E. N. *See* Bronnikov, K. A. 1537

Ciufolini, I. *See* Lämmerzahl, C. 2373

Ciufolini, Ignazio. Frame Dragging and Lense-Thirring Effect 2257

Clairon, André. *See* Wolf, Peter 2351

Collas, Peter and Klein, David. A Simple Criterion for Nonrotating Reference Frames (Letter) 1493

Collas, Peter and Klein, David. Causality Violating Geodesics in Bonnor's Rotating Dust Metric (Letter) 2549

Collas, Peter and Klein, David. Frame Dragging Anomalies for Rotating Bodies (Letter) 1197

Cotsakis, Spiros. Global Hyperbolicity of Sliced Spaces (Letter) 1183

Coule, D. H. Is There Paradox with Infinite Space? 2095

Dadhich, Naresh. *See* Paranjape, Aseem 1189

Das, A. and DeBenedictis, A. Inhomogeneous Cosmologies with Tachyonic Dust as Dark Matter 1741

Das, A. *See* DeBenedictis, A. 2481

de Leonm, Ponce J. Brane-World Models Emerging from Collisions of Plane Waves in 5*D* 923

De Pietri, Roberto. *See* Agresti, Juri 1055

De Smet, Pieter-Jan. The Petrov Type of the Five-Dimensional Myers-Perry Metric (Letter) 1501

DeBenedictis, A. *See* Das, A. 1741

DeBenedictis, A., Das, A., and Kloster, S. The Gravitating Perfect Fluid-Scalar Field Equations: Quintessence and Tachyonic Matter 2481

Debnath, Ujjal, and Chakraborty, Subenoy. Gravitational Collapse in Higher Dimensional Space-Time 1243

Dehnen, H., Ivashchuk, V. D., and Melnikov, V. N. Billiard Representation for Multidimensional Multi-Scalar Cosmological Model with Exponential Potentials 1563

Delgado, A. *See* Kajari, E. 2289

Denisova, Irene P., Krivchenkov, Igor V., Vshivtseva, Polina A., and Zubrilo, Alexander A. Nonlinear Gravitational-Electromagnetic Bending of the Rays of Weak Electromagnetic Waves in the Fields of Pulsars and Magnetars (Letter) 889

Dick, Rainer. On the Newtonian Limit in Gravity Models with Inverse Powers of R (Letter) 217

Dittus, H. Why Doing Fundamental Physics on the ISS?—The Experimental Conditions 601

Dittus, H. *See* Lämmerzahl, C. 2373

Dittus, H. *See* Lämmerzahl, C. 615

Dittus, Hansjörg, Lämmerzahl, Claus, and Selig, Hanns. Testing the Universality of Free Fall for Charged Particles in Space 571

Dittus, Hansjörg and Lämmerzahl, Claus. Preface 471

Dohm, V. *See* Lämmerzahl, C. 615

Dragon, Norbert. Special Relativity and Motions Faster Than Light. By Moses Fayngold (Book Review) 1737

Duncan, R. *See* Lämmerzahl, C. 615

Dyer, C. C. *See* Mureika, J. R. 151

Eiroa, Ernesto F. and Romero, Gustavo E. Linearized Stability of Charged Thin-Shell Wormholes 651

Ertmer, W. *See* Jentsch, C. 2197

Fabris, J. C., Gonçalves, S. V. B., and Santos, M. S. Gravitational Waves in the Generalized Chaplygin Gas Model (Letter) 2559

Fabris, J. C., Gonçalves, S. V. B., and Sá Ribeiro, R. de. Generalized Chaplygin Gas with $\alpha = 0$ and the ΛCDM Cosmological Model (Letter) 211

Fadeev, S. B. *See* Bronnikov, K.-A. 1527

Fauser, Bertfried. Tensor Analysis and Nonlinear Tensor Functions. By Yu. I. Dimitrienko (Book Review) 1237

Feenstra, L., Andersson, L. M., and Schmiedmayer, J. Microtraps and Atom Chips: Toolboxes for Cold Atom Physics 2317

Feng, Jonathan L. Probing Gravitational Interactions of Elementary Particles (Essay) 2575

Fernando, Sharmanthie and Arnold, Keith. Scalar Perturbations of Charged Dilaton Black Holes 1805

Fernando, Sharmanthie. Quasinormal Modes of Charged Dilaton Black Holes in 2 + 1 Dimensions 71

Ferrando, Joan Josep and Sáez, Juan Antonio. Aligned Electric and Magnetic Weyl Fields 2497

Ferraris, Marco and Spallicci, Alessandro D. A. M. Solutions of All One-Dimensional Wave Equations with Time Independent Potential, and Separable Variables (Letter) 1955

Fil'chenkov, M. L. *See* Krechet, V. G. 1641

Gallo, Emanuel. Generating Static Black Holes in Higher Dimensional Space-Times (Letter) 1463

Gao, Xin-Qin, Qiang, Li-E, Zhu, Jian-Yang, and Zhao, Zheng. Discussing Again on the Thermal Property of Kinnersley Black Hole Using a New Tortoise Coordinate Transformation 2511

Garay, Oscar J. *See* Arroyo, Josu 1441

Gariel, J., Marcilhacy, G., and Santos, N. O. Parametrization of the Kerr-NUT Solution (Letter) 2175

Garvey, Robert. *See* Giblin, John T., Jr 83

Gaspar, Yves. Time Asymmetry and Chaos in General Relativity 2085

Gavrilov, V. R., Melnikov, V. N., and Abdyrakhmanov, S. T. Flat Friedmann Universe Filled by Dust and Scalar Field with Multiple Exponential Potential 1579

Geršl, J., Klepáč, P., and Horský, J. A Charged Rotating Cylindrical Shell 1399

Giambò, Roberto, Giannoni, Fabio, Magli, Giulio, and Piccionem, Paolo. Naked Singularities Formation in the Gravitational Collapse of Barotropic Spherical Fluids 1279

Giannoni, Fabio. *See* Giambò, Roberto 1279

Gibble, K. *See* Lämmerzahl, C. 615

Giblin, John T., Jr, Marolf, Donald, and Garvey, Robert. Spacetime Embedding Diagrams for Spherically Symmetric Black Holes 83

Gladush, Valentin D. The Variational Principle and Effective Action for a Spherical Dust Shell 1821

Godlowski, Wlodzimierz and Szydlowski, Marek. Brane Universes Tested by Supernovae Ia 767

Gonçalves, S. V. B. *See* Fabris, J. C. 2559

Gonçalves, S. V. B. *See* Fabris, J. C. 211

Govender, M. *See* Govinder, K. S. 1265

Govinder, K. S. and Govender, M. On a Framework for Generating Nonstatic Solutions of the Einstein Field Equations 1265

Gumjudpai, Burin. Brane-Cosmology Dynamics with Induced Gravity 747

Guéron, Eduardo and Letelier, Patricio S. Binary Systems around a Black Hole 2107

Gwan Yi, Yong. On the Indication from Pioneer 10/11 Data of an Apparent Anomalous, Weak, Long-Range Acceleration (Letter) 875

Gürses, Metin and Sarıoğlu, Özgür. Some Further Properties of the Accelerated Kerr-Schild Metrics 403

Haesen, Stefan. Vacuum Rank 1 Space-Time Perturbations 1791

Hammond, G. D. *See* Speake, C. C. 503

Hammond, Richard T. *See* Pilling, Terry 2131

Heller, Michael, Odrzygóźdź, Zdzisław, Pysiak, Leszek, and Sasin, Wiesław. Noncommutative Unification of General Relativity and Quantum Mechanics. A Finite Model 111

Hernández–Pastora, J. L., Manko, O. V., Manko, V. S., Martín, J., and Ruiz, E. Equilibrium States in the Quadruple–Kerr Solution 781

Herrera, L. and Barreto, W. Evolution of Relativistic Polytropes in the Post–Quasi–Static Regime 127

Herrera, Ramón, Pavón, Diego, and Zimdahl, Winfried. Exact Solutions for the Interacting Tachyonic–Dark Matter System (Letter) 2161

Herrero, Alicia and Morales, Juan Antonio. Schwarzschild Interior in Conformally Flat Form 2063

Hollands, Stefan and Wald, Robert M. Quantum Field Theory Is not Merely Quantum Mechanics Applied to Low Energy Effective Degrees of Freedom 2595

Hong, Soon-Tae. Complete Higher Dimensional Global Embedding Structures of Various Black Holes 1919

Horský, J. *See* Geršl, J. 1399

Horwood, Joshua T. and Wainwright, John. Asymptotic Regimes of Magnetic Bianchi Cosmologies 799

Hänsch, Theodor W. *See* Walz, Jochen 561

Iorio, L. *See* Lämmerzahl, C. 2373

Iorio, Lorenzo and Morea, Alberto. The Impact of the New Earth Gravity Models on the Measurement of the Lense–Thirring Effect 1321

Iorio, Lorenzo. On the Possibility of Testing the Weak Equivalence Principle with Artificial Earth Satellites 361

Iorio, Lorenzo. Some Comments on a Recently Derived Approximated Solution of the Einstein Equations for a Spinning Body with Negligible Mass 1987

Ivashchuk, V. D. *See* Dehnen, H. 1563

Ivashchuk, V. D., Melnikov, V. N., and Selivanov, A. B. Composite S-Brane Solutions on the Product of Ricci-Flat Spaces 1593

Jaekel, Marc-Thierry. *See* Reynaud, Serge 2271

Jentsch, C., Müller, T., Rasel, E. M., and Ertmer, W. HYPER: A Satellite Mission in Fundamental Physics Based on High Precision Atom Interferometry 2197

Kajari, E., Walser, R., Schleich, W. P., and Delgado, A. Sagnac Effect of Gödel's Universe 2289

Kamilya, S. and Modak, B. Noether Symmetry Study in General Scalar Tensor Theory 673

Kamilya, S., Modak, B., and Biswas, S. Induced Gravity Theory from Noether Symmetry 661

Kanno, Sugumi and Soda, Jiro. Low Energy Effective Action for Dilatonic Braneworld —A Formalism for Inflationary Braneworld— 689

Karkowski, Janusz. *See* Malec, Edward 2151

Kassandrov, Vladimir V. and Trishin, Vladimir N. Effective Connections and Fields Associated with Shear-Free Null Congruences 1603

Kelly, P. F. *See* Pilling, Terry 2131

Khabibullin, Artem R. *See* Khusnutdinov, Nail R. 1613

Khusnutdinov, Nail R. and Khabibullin, Artem R. Zero Point Energy of a Massless Scalar Field in the Cosmic String Space-Time 1613

Kim, Sung-Won. *See* Sushkov Sergey V. 1671

Klein, David. *See* Collas, Peter 1493

Klein, David. *See* Collas, Peter 2549

Klein, David. *See* Collas, Peter 1197

Klepáč, P. *See* Geršl, J. 1399

Kloster, S. *See* DeBenedictis, A. 2481

Kolosnitsyn, N. I. and Melnikov, V. N. Test of the Inverse Square Law through Precession of Orbits 1619

Kornilov, D. A. *See* Zhuravlev, V. M. 1719

Koshelev, N. A. Scalar Perturbations in Inflationary Models Based on the Non-Linear Sigma Model 1625

Krechet, V. G., Shikin, G. N., and Fil'chenkov, M. L. Quantum Cosmology with Scalar-Vector and Scalar-Spinor Interactions 1641

Kremer, G. M. Brane Cosmology with a van der Waals Equation of State (Letter) 1423

Kremer, Gilberto M. and Alves, Daniele S. M. Acceleration Field of a Universe Modeled as a Mixture of Scalar and Matter Fields 2039

Krivchenkov, Igor V. *See* Denisova, Irene P. 889

Kröger, H., Melkonyan, G., and Rubin, S. G. Cosmological Dynamics of Scalar Field with Non-Minimal Kinetic Term 1649

Kumar De, Archan, Bhanja, Sisir, and Chakraborty, Subenoy. String Cosmology in Brane World Scenarios (Letter) 863

Kuriakose, P. I. and Kuriakose, V. C. Back Reaction in Static Einstein Spaces—Change of Entropy 2433

Kuriakose, V. C. *See* Kuriakose, P. I. 2433

Kuusk, Piret and Saal, Margus, A Cosmological Model of Holographic Brane Gravity 1001

Lake, Kayll. Differential Invariants of the Kerr Vacuum (Letter) 1159

Lake, Kayll. Non Conducting Spherically Symmetric Fluids (Letter) 193

Lambrecht, Astrid. *See* Reynaud, Serge 2271

Lamine, Brahim. *See* Reynaud, Serge 2271

Lehner, Thierry. *See* Menza, Laurent Di. 2635

Lessner, G. Are the Peaks in the Cosmic Microwave Background Really Acoustic? 903

Lessner, Gerhard. Gravitation and Cosmology: From the Hubble Radius to the Planck Scale. By Richard L. Amoroso, Geoffrey Hunter, Menas Kafatos, and Jean-Pierre Vigier (Book Review) 1241

Letelier, Patricio S. *See* Guéron, Eduardo 2107

Lichun, Zhang. *See* Ren, Zhao 2539

Lipa, J. *See* Lämmerzahl, C. 615

Lockerbie, N. A. ISLAND—Inverse Square Law Acceleration Measurement Using iNertial Drift 593

Lockerbie, N. *See* Lämmerzahl, C. 615

Luiten, André N. *See* Wolf, Peter 2351

Lupu, Roxana and Merches, Ioan. The Cosmological Constant in the Framework of Gravito-Magnetodynamic Waves in Weak Gravitational Fields 245

Lusanna, Luca. *See* Agresti, Juri 1055

Lämmerzahl, C., Ciufolini, I., Dittus, H., Iorio, L., Müller, H., Peters, A., Samain, E., Scheithauer, S., and Schiller, S. OPTIS—An Einstein Mission for Improved Tests of Special and General Relativity 2373

Lämmerzahl, Claus. *See* Dittus, Hansjörg 571

Lämmerzahl, C., Ahlers, G., Ashby, N., Barmatz, M., Biermann, P. L., Dittus, H., Dohm, V., Duncan, R., Gibble, K., Lipa, J., Lockerbie, N., Mulders, N., and Salomon, C. Experiments in Fundamental Physics Scheduled and in Development for the ISS (Review) 615

López-Ortega, A. Dirac Fields in 3D de Sitter Spacetime 1299

Lämmerzahl, Claus. *See* Dittus, Hansjörg 471

MacCallum, M. Memorial to H. Stephani 899

MacCallum, M. Empty Space-Times Admitting a three Parameter group of Motions, by A. H. Taub (Editor's Note) 2689

Maeda, Kei-ichi. *See* Sawado, Nobuyuki 1361

Magli, Giulio. *See* Giambò, Roberto 1279

Majerník, V. The Energy Density of the Quaternionic Field as Dark Energy in the Universe (Letter) 2139

Majerník, V. The Force Exerting on Cosmic Bodies in a Quaternionic Field (Letter) 1143

Malec, Edward, Wylężek, Grzegorz, and Karkowski, Janusz. Note on the Luminosity Distance (Letter) 2151

Maluf, Jose Madih *See* Sousa, Adellane Araujo 967

Mancini, L. *See* Bozza, V. 435

Manko, O. V. *See* Hernández–Pastora, J. L. 781

Manko, V. S. *See* Hernández–Pastora, J. L. 781

Marcilhacy, G. *See* Gariel, J. 2175

Marolf, Donald. *See* Giblin, John T., Jr 83

Mars, Marc. Developments in Mathematical and Experimental Physics. Volume A: Cosmology and Gravitation. By A. Macias, F. Uribe, and E. Diaz (Book Review) 229

Martins, M. A. P. *See* Som, M. M. 459

Martins, M. A. P. *See* Som, M. M. 185

Martucci, Luca. *See* Agresti, Juri 1055

Mashhoon, B. Brief Biography: Abraham H. Taub 2695

Martín, J. *See* Hernández–Pastora, J. L. 781

Meinel, Reinhard. Gravity: An Introduction to Einstein's General Relativity. By James B. Hartle (Book Review) 2417

Melkonyan, G. *See* Kröger, H. 1649

Melnikov, V. N. *See* Chervon, S. V. 1509

Melnikov, V. N. *See* Dehnen, H. 1563

Melnikov, V. N. *See* Gavrilov, V. R. 1579

Melnikov, V. N. *See* Ivashchuk, V. D. 1593

Melnikov, V. N. *See* Kolosnitsyn, N. I. 1619

Meléndez, Leandro and Chauvet, Pablo. New Solutions to Einstein's Equations in the Taub Universe and Their Accelerating Stage 1781

Meng, Xin-He and Wang, Peng. Gravitational Potential in the Palatini Formulation of Modified Gravity (Letter) 1947

Meng, Xinhe and Wang, Peng. Palatini Formulation of Modified Gravity With Squared Scalar Curvature (Letter) 2673

Menza, Laurent Di and Lehner, Thierry. The Chaotic Mixture and the Suppression of Chaos in Scalar–tensor Cosmologies 2635

Merches, Ioan. *See* Lupu, Roxana 245

Messenger, Paul. *See* Wiltshire, Ron. 1213

Michtchenko, A. V. *See* Bronnikov, K. A. 1527

Miguel, A. San. *See* Pascual-Sánchez, J.-F. 2075

Miguelote, A. Y., Tomimura, N. A., and Wang, Anzhong. Gravitational Collapse of Self-Similar Perfect Fluid in $2 + 1$ Gravity 1883

Modak, B. *See* Kamilya, S., 661

Modak, B. *See* Kamilya, S. 673

Moody, M. Vol. *See* Paik, Ho Jung 523

Morales, Juan Antonio. *See* Herrero, Alicia 2063

Morea, Alberto. *See* Iorio, Lorenzo 1321

Morten, J. P. *See* Brevik, I. 2021

Morégula, Andréa A. *See* Som, M. M. 459

Mosna, R. A. and Pereira, J. G. Some Remarks on the Coupling Prescription of Teleparalled Gravity (Letter) 2525

Mulders, N. *See* Lämmerzahl, C. 615

Mureika, J. R. and Dyer, C. C. Multifractal Analysis of Packed Swiss Cheese Cosmologies 151

Muslih, Sami I. Path Integral Quantization of 2D-Gravity (Letter) 1151

Müller, H. *See* Lämmerzahl, C. 2373

Müller, T. *See* Jentsch, C. 2197

Neto, Paulo Maia. *See* Reynaud, Serge 2271

Nojiri, Shin'ichi and Odintsov, Sergei D. Modified Gravity with $\ln R$ Terms and Cosmic Acceleration 1765

Noundjeu, P. and Noutchegueme, N. Local Existence and Continuation Criterion for Solutions of the Spherically Symmetric Einstein-Vlasov-Maxwell System 1373

Noutchegueme, N. *See* Noundjeu, P. 1373

O'Donnell, Peter. A Solution of the Weyl–Lanczos Equations for the Schwarzschild Space-Time (Letter) 1415

Odintsov, Sergei D. *See* Nojiri, Shin'ichi 1765

Odrzygóźdź, Zdzisław. *See* Heller, Michael 111

Ovido, X. *See* Angonin-Willaime, M.-C. 411

Ovido, X. *See* Tourrenc, Ph. 2237

Özdemir, F. and Özdemir, N. Maxwell Equations in the Spinning Cosmic String Spacetimes 2053

Özdemir, N. *See* Özdemir, F. 2053

Paik, Ho Jung, Moody, M. Vol, and Strayer, Donald M. Short-Range Inverse-Square Law Experiment in Space 523

Papadopoulos, D. B. Gravitational Waves Interacting with a Spinning Charged Particle in the Presence of a Uniform Magnetic Field 949

Paranjape, Aseem and Dadhich, Naresh. Embedding Diagrams for the Reissner-Nordström Spacetime (Letter) 1189

Parikh, Maulik. A Secret Tunnel Through the Horizon (Essay) 2419

Pascual-Sánchez, J.-F., Miguel, A. San, and Vicente, F. Geometry of an Accelerated Rotating Disk 2075

Pavón, Diego. *See* Herrera, Ramón 2161

Pavón, Diego. *See* Zimdahl, Winfried 1483

Pereira, J. G. *See* Aldrovandi, R. 101

Pereira, J. G. *See* Arcos, H. I. 2441

Pereira, J. G. *See* Mosna, R. A. 2525

Perjés, Zoltán. Exact Solutions of Einstein's Field Equations. By H. Stephani, D. Kramer, M. MacCallum, C. Hoenselaers, and E. Herlt (Book Review) 2189

Peters, A. *See* Lämmerzahl, C. 2373

Piccionem, Paolo. *See* Giambò, Roberto 1279

Pieter-Jan. *See* De Smet 1501

Pilling, Terry, Hammond, Richard T., and Kelly, P. F. Antisymmetric Tensor Contribution to the Muon $g - 2$ (Letter) 2131

Pinto-Neto, N. and Trajtenberg, P. I. The Hamiltonian of Asymptotically Friedmann-Lemaître-Robertson-Walker Spacetimes 1871

Podolský, J. and Svítek, O. Some High-Frequency Gravitational Waves Related to Exact Radiative Spacetimes 387

Ponce de Leon, J. Electromagnetic Mass-Models in General Relativity Reexamined (Letter) 1453

Ponce de Leon, J. Extra Force from an Extra Dimension: Comparison between Brane Theory, Space-Time-Matter Theory, and Other Approaches 1335

Price, Richard H. Normal Forces in Stationary Spacetimes (Letter) 2171

Prikas, Athanasios. Q-Stars in Anti de Sitter Spacetime 1841

Pysiak, Leszek. *See* Heller, Michael 111

Pössel, M. The Constants of Nature: From Alpha to Omega By John Barrow (Book Review) 465

Qiang, Li-E. *See* Gao, Xin-Qin 2511

Quiroga, John. *See* Brevik, Iver 1433

Rajaraman, Arvind. *See* Feng, Jonathan L. 2575

Rasel, E. M. *See* Jentsch, C. 2197

Raychaudhuri, A. K. Singularity-Free Cosmological Solutions with Non-Rotating Perfect Fluids 343

Ren, Zhao and Sheng-Li, Zhang. Dilatonic Black Hole Entropy without Brick Walls (Letter) 2123

Ren, Zhao, Yueqin, Wu, and Lichun, Zhang. Quantum Statistical Entropy of d-Dimensional Horowitz–Strominger Black Hole (Letter) 2539

Reynaud, Serge, Lamine, Brahim, Lambrecht, Astrid, Neto, Paulo Maia, and Jaekel, Marc-Thierry. HYPER and Gravitational Decoherence 2271

Roberts, Mark D. Galactic Metrics 2423

Romero, Carlos. *See* Chervon, Sergey 1555

Romero, Gustavo E. *See* Eiroa, Ernesto F. 651

Roscoe, D. F. Gravitation in the Fractal $D = 2$ Inertial Universe: New Phenomenology in Spiral Discs and a Theoretical Basis for MOND 3

Rosquist, Kjell. A Moving Medium Simulation of Schwarzschild Black Hole Optics (Letter) 1977

Rubin, S. G. *See* Kröger, H. 1649

Ruggiero, M. L. *See* Tartaglia, A. 293

Ruiz, E. *See* Hernández–Pastora, J. L. 781

Russell, Neil. Testing Relativity With Orbiting Oscillators 2341

Saal, Margus. *See* Kuusk, Piret 1001

Sadjadim, H. Mohseni. Electrostatic Self-Energy in QED_2 on Curved Background (Letter) 199

Salisbury, Donald. A Unified Grand Tour of Theoretical Physics. By Ian D. Lawrie (Book Review) 225

Salomon, C. *See* Lämmerzahl, C. 615

Samain, E. *See* Lämmerzahl, C. 2373

Samaroo, K. *See* Shchigolev, V. K. 1661

Santarelli, Giorgio. *See* Wolf, Peter. 2351

Santos, M. S. *See* Fabris, J. C. 2559

Santos, N. O. *See* Gariel, J. 2175

Sarıoğlu, Özgür. *See* Gürses, Metin 403

Sasin, Wiesław. *See* Heller, Michael 111

Savelova, E. P. *See* Zhuravlev, V. M. 1719

Sawado, Nobuyuki, Shiiki, Noriko, Maeda, Kei-ichi, and Torii, Takashi. Regular and Black Hole Skyrmions with Axisymmetry 1361

Scheithauer, S. *See* Lämmerzahl, C. 2373

Schiller, S. *See* Lämmerzahl, C. 2373

Schleich, W. P. *See* Kajari, E. 2289

Schmidt, Hans-Jürgen. Editorial 1

Schmiedmayer, J. *See* Feenstra, L. 2317

Schäfer, G. Gravitomagnetic Effects 2223

Selig, Hanns. *See* Dittus, Hansjörg 571

Selivanov, A. B. *See* Ivashchuk, V. D. 1593

Setare, M. R. and Altaie, M. B. Casimir Energy for Spherical Shell in Schwarzschild Black Hole Background 331

Setare, M. R. Casimir Stress for Cylindrical Shell in de Sitter Space (Letter) 1965

Shchigolev, V. K. and Samaroo, K. Generalized Exact Cosmologies with Interacting Yang-Mills and Nonlinear Scalar Fields 1661

Shen, Y. G. *See* Xiang, Li. 1473

Sheng-Li, Zhang. *See* Ren, Zhao 2123

Shiiki, Noriko. *See* Sawado, Nobuyuki 1361

Shikin, G. N. *See* Bronnikov, K. A. 1537

Shikin, G. N. *See* Krechet, V. G. 1641

Shinkai, Hisa-aki and Yoneda, Gen. Constraint Propagation in $(N + 1)$-Dimensional Space-Time (Letter) 1931

Singh, T. P. The Quantum Gravitational Black Hole Is Neither Black Nor White 2589

Soda, Jiro. *See* Kanno, Sugumi 689

Soker, Noam and Harpaz, Amos. Radiation from a Charge Supported in a Gravitational Field 315

Som, M. M. and Martins, M. A. P. Junction Conditions of Spherically Symmetric Collapse with Dissipation (Letter) 185

Som, M. M., Martins, M. A. P., and Morégula, Andréa A. Spherically Symmetric Metrics with Shear Controlling Expansion (Letter) 459

Sousa, Adellane Araujo and Maluf, Jose Madih. Gravitomagnetic Effect and Spin-Torsion Coupling 967

Soussa, M. E. and Woodard, R. P. The Force of Gravity from a Lagrangian Containing Inverse Powers of the Ricci Scalar (Letter) 855

Spallicci, Alessandro D. A. M. *See* Ferraris, Marco 1955

Speake, C. C., Hammond, G. D., and Trenkel, C. The Feasibility of Testing the Inverse Square Law of Gravitation at Newtonian Strength and at Mass Separations of 1 μm 503

Starobinsky, A. A. *See* Chervon, S. V. 1509

Stephani, Hans. Memorial: by M. MacCallum 899

Strayer, Donald M. *See* Paik, Ho Jung 523

Sumner, T. J. Equivalence Principle Measurements 2331

Sushkov Sergey V. and Kim, Sung-Won. Cosmological Evolution of a Ghost Scalar Field 1671

Svítek, O. *See* Podolský, J. 387

Szydlowski, Marek. *See* Godlowski, Wlodzimierz 767

Sá Ribeiro, R. de. *See* Fabris, J. C. 211

Sáez, Juan Antonio. *See* Ferrando, Joan Josep 2497

Takayama, Fumihiro. *See* Feng, Jonathan L. 2575

Tartaglia, A. and Ruggiero, M. L. Gravitomagnetic Measurement of the Angular Momentum of Celestial Bodies 293

Taub, A. H. Empty Space-Times Admitting a Three Parameter Group of Motions 2699

Tobar, Michael E. *See* Wolf, Peter 2351

Tomimura, N. A. *See* Miguelote, A. Y. 1883

Torii, Takashi. *See* Sawado, Nobuyuki 1361

Tourrenc, Ph. *See* Angonin-Willaime, M.-C. 411

Tourrenc, Ph. *See* Varvella, M. Arnaud 983

Tourrenc, Ph., Angonin, M.-C., and Ovido, X. Tidal Gravitational Effects in a Satellite 2237

Trajtenberg, P. I. *See* Pinto-Neto, N. 1871

Trenkel, C. *See* Speake, C. C. 503

Trishin, Vladimir N. *See* Kassandrov, Vladimir V. 1603

Troisi, Antonio. *See* Canfora, Fabrizio 373

Tsamparlis, Michael and Apostolopoulos, Pantelis S. Ricci and Matter Collineations of Locally Rotationally Symmetric Space-Times 47

Tsamparlis, Michael. *See* Apostolopoulos, Pantelis S. 277

Tsaregorodtsev, L. I. and Tsaregorodtseva, V. V. Photon Decays in the Radiation-Dominated Universe: Scalar Electrodynamics 1679

Tsaregorodtseva, V. V. *See* Tsaregorodtsev, L. I. 1679

Türkyilmaz, I. *See* Camci, U. 2005

Uchaikin, V. V. The Mesofractal Universe Driven by Rayleigh-Lèvy Walks 1689

Uhlíř, M. Rest Energy of Classical Self Fields of Point Gravitating Sources 713

Vargas, T. The Energy of the Universe in Teleparallel Gravity 1255

Varvella, M. Arnaud, Angonin, M. C., and Tourrenc, Ph. Increase of the Number of Detectable Gravitational Waves Signals Due to Gravitational Lensing 983

Vaz, Cenalo. *See* Singh, T. P. 2589

Vicente, F. *See* Pascual-Sánchez, J.-F. 2075

Virbhadra, K. S. The Galactic Black Hole: Lectures on General Relativity and Astrophysics. By Heino Falcke and Friedrich W. Hehl (Book Review) 1983

Vshivtseva, Polina A. *See* Denisova, Irene P. 889

Vu, K. H. *See* Aldrovandi, R. 101

Wainwright, John. *See* Horwood, Joshua T. 799

Wald, Robert M. *See* Hollands, Stefan 2595

Walser, R. *See* Kajari, E. 2289

Walz, Jochen and Hänsch, Theodor W. A Proposal to Measure Antimatter Gravity Using Ultracold Antihydrogen Atoms 561

Wang, Anzhong, Wu, Yumei, and Chao Wu, Zhong. Self-Similar Collapse of Scalar Field with Plane Symmetry (Letter) 1225

Wang, Anzhong. *See* Miguelote, A. Y. 1883

Wang, Bo-Bo. Entropies of a Toroidal Black Hole Due to Scalar and Dirac Fields 735

Wang, Peng. *See* Meng, Xin-He. 1947

Wang, Peng. *See* Meng, Xinhe 2673

Wesson, Paul S. Space-Time Uncertainty from Higher-Dimensional Determinism (Letter) 451

Wiltshire, Ron and Messenger, Paul. Slowly Rotating, Compact Fluid Sources Embedded in Kerr Empty Space-Time (Letter) 1213

Wolf, Peter, Tobar, Michael E., Bize, Sébastien, Clairon, André, Luiten, André N. and Santarelli, Giorgio. Whispering Gallery Resonators and Tests of Lorentz Invariance 2351

Woodard, R. P. *See* Soussa, M. E. 855

Wu, Yumei. *See* Wang, Anzhong 1225

Wylężek, Grzegorz. *See* Malec, Edward 2151

Xiang, Li and Shen, Y. G. Gravitational Thermodynamics of a Vaidya Black Hole (Letter) 1473

Xiang, Li. *See* Chengzhou, Liu 1135

Yoneda, Gen. *See* Shinkai, Hisa-aki 1931

Yueqin, Wu. *See* Ren, Zhao 2539

Zakhary, E. and Carminati, J. A New Algorithm for the Segre Classification of the Trace-Free Ricci Tensor 1015

Zhao, Zheng. *See* Gao, Xin-Qin 2511

Zheng, Zhao. *See* Chengzhou, Liu 1135

Zhu, Jian-Yang. *See* Gao, Xin-Qin 2511

Zhuk, A. The Scalar-Tensor Theory of Gravitation By Yasunori Fujii and Kei-ichi Maeda (Book Review) 469

Zhuravlev, V. M., Kornilov, D. A., and Savelova, E. P. The Scalar Fields with Negative Kinetic Energy, Dark Matter and Dark Energy 1719

Zimdahl, Winfried and Pavón, Diego. Statefinder Parameters for Interacting Dark Energy (Letter) 1483

Zimdahl, Winfried. *See* Herrera, Ramón 2161

Zubrilo, Alexander A. *See* Denisova, Irene P. 889

General Relativity and Gravitation

Volume 36, Number 1 **January 2004**

CONTENTS

EDITORIAL

Hans-Jürgen Schmidt 1

RESEARCH ARTICLES

Gravitation in the Fractal $D = 2$ Inertial Universe: New Phenomenology in Spiral Discs and a Theoretical Basis for MOND
D. F. Roscoe 3

Ricci and Matter Collineations of Locally Rotationally Symmetric Space-Times
Michael Tsamparlis and Pantelis S. Apostolopoulos 47

Quasinormal Modes of Charged Dilaton Black Holes in 2 + 1 Dimensions
Sharmanthie Fernando 71

Spacetime Embedding Diagrams for Spherically Symmetric Black Holes
John T. Giblin, Jr, Donald Marolf, and Robert Garvey 83

Gravitation without the Equivalence Principle
R. Aldrovandi, J. G. Pereira, and K. H. Vu 101

Noncommutative Unification of General Relativity and Quantum Mechanics. A Finite Model
Michael Heller, Zdzisław Odrzygóźdź, Leszek Pysiak, and Wiesław Sasin 111

Evolution of Relativistic Polytropes in the Post–Quasi–Static Regime
L. Herrera and W. Barreto 127

REVIEW

Multifractal Analysis of Packed Swiss Cheese Cosmologies
J. R. Mureika and C. C. Dyer 151

LETTERS

Junction Conditions of Spherically Symmetric Collapse with Dissipation
M. M. Som and M. A. P. Martins 185

Non Conducting Spherically Symmetric Fluids
Kayll Lake 193

Electrostatic Self-Energy in QED_2 on Curved Background
H. Mohseni Sadjadi 199

Generalized Chaplygin Gas with $\alpha = 0$ and the ΛCDM Cosmological Model
J. C. Fabris, S. V. B. Gonçalves, and R. de Sá Ribeiro 211

On the Newtonian Limit in Gravity Models with Inverse Powers of R
Rainer Dick 217

BOOK REVIEWS

A Unified Grand Tour of Theoretical Physics. By Ian D. Lawrie
Donald Salisbury 225

Developments in Mathematical and Experimental Physics. Volume A: Cosmology and Gravitation. By A. Macias, F. Uribe, and E. Diaz (eds)
Marc Mars 229

General Relativity and Gravitation

Volume 36, Number 2 **February 2004**

CONTENTS

RESEARCH ARTICLES

Quasi-Spherical Gravitational Collapse in Any Dimension
Ujjal Debnath, Subenoy Chakraborty, and John D. Barrow 231

The Cosmological Constant in the Framework of Gravito-Magnetodynamic Waves in Weak Gravitational Fields
Roxana Lupu and Ioan Merches 245

Strong-Coupled Relativity without Relativity
Edward Anderson 255

Geometric Equations of State in Friedmann-Lemaître Universes Admitting Matter and Ricci Collineations
Pantelis S. Apostolopoulos and Michael Tsamparlis 277

Gravitomagnetic Measurement of the Angular Momentum of Celestial Bodies
A. Tartaglia and M. L. Ruggiero 293

C-Field Cosmology in Higher Dimensions
S. Chatterjee and A. Banerjee 303

Radiation from a Charge Supported in a Gravitational Field
Noam Soker and Amos Harpaz 315

Casimir Energy for Spherical Shell in Schwarzschild Black Hole Background
M. R. Setare and M. B. Altaie 331

Singularity-Free Cosmological Solutions with Non-Rotating Perfect Fluids
A. K. Raychaudhuri 343

On the Possibility of Testing the Weak Equivalence Principle with Artificial Earth Satellites
Lorenzo Iorio 361

Cosmological Consequences of an Inhomogeneous Space-Time
Fabrizio Canfora and Antonio Troisi 373

Some High-Frequency Gravitational Waves Related to Exact Radiative Spacetimes
J. Podolský and O. Švítek 387

Some Further Properties of the Accelerated Kerr-Schild Metrics
Metin Gürses and Özgür Sarıoğlu 403

Gravitational Perturbations on Local Experiments in a Satellite: The Dragging of Inertial Frame in the HYPER Project
M.-C. Angonin-Willaime, X. Ovido, and Ph. Tourrenc 411

Time Delay in Black Hole Gravitational Lensing as a Distance Estimator
V. Bozza and L. Mancini 435

LETTERS

Space-Time Uncertainty from Higher-Dimensional Determinism
Paul S. Wesson 451

Spherically Symmetric Metrics with Shear Controlling Expansion
M. M. Som, M. A. P. Martins, and Andréa A. Morégula 459

BOOK REVIEWS

The Constants of Nature: From Alpha to Omega By John Barrow
M. Pössel 465

The Scalar-Tensor Theory of Gravitation By Yasunori Fujii and Kei-ichi Maeda
A. Zhuk 469

General Relativity and Gravitation

Volume 36, Number 3 **March 2004**

CONTENTS

Special Issue: Fundamental Physics on the ISS
Guest Editors: C. Lämmerzahl and H. Dittus

PREFACE
Hansjörg Dittus and Claus Lämmerzahl 471

RESEARCH ARTICLES
Quantum Theory of Atom-Wave Beam Splitters and Application to Multidimensional Atomic Gravito-Inertial Sensors
Christian J. Bordé 475

The Feasibility of Testing the Inverse Square Law of Gravitation at Newtonian Strength and at Mass Separations of 1 μm
C. C. Speake, G. D. Hammond, and C. Trenkel 503

Short-Range Inverse-Square Law Experiment in Space
Ho Jung Paik, M. Vol Moody, and Donald M. Strayer 523

Fundamental Physics in Space: A Quantum-Gravity Perspective
Giovanni Amelino-Camelia 539

A Proposal to Measure Antimatter Gravity Using Ultracold Antihydrogen Atoms
Jochen Walz and Theodor W. Hänsch 561

Testing the Universality of Free Fall for Charged Particles in Space
Hansjörg Dittus, Claus Lämmerzahl, and Hanns Selig 571

ISLAND—Inverse Square Law Acceleration Measurement Using iNertial Drift
N. A. Lockerbie 593

Why Doing Fundamental Physics on the ISS?—The Experimental Conditions
H. Dittus 601

REVIEW
Experiments in Fundamental Physics Scheduled and in Development for the ISS
C. Lämmerzahl, G. Ahlers, N. Ashby, M. Barmatz, P. L. Biermann, H. Dittus, V. Dohm, R. Duncan, K. Gibble, J. Lipa, N. Lockerbie, N. Mulders, C. Salomon 615

General Relativity and Gravitation

Volume 36, Number 4 **April 2004**

CONTENTS

RESEARCH ARTICLES

Linearized Stability of Charged Thin-Shell Wormholes
Ernesto F. Eiroa and Gustavo E. Romero 651

Induced Gravity Theory from Noether Symmetry
S. Kamilya, B. Modak, and S. Biswas 661

Noether Symmetry Study in General Scalar Tensor Theory
S. Kamilya and B. Modak 673

Low Energy Effective Action for Dilatonic Braneworld
—A Formalism for Inflationary Braneworld—
Sugumi Kanno and Jiro Soda 689

Rest Energy of Classical Self Fields of Point Gravitating Sources
M. Uhlíř 713

Entropies of a Toroidal Black Hole Due to Scalar and Dirac Fields
Bo-Bo Wang 735

Brane-Cosmology Dynamics with Induced Gravity
Burin Gumjudpai 747

Brane Universes Tested by Supernovae Ia
Włodzimierz Godłowski and Marek Szydłowski 767

Equilibrium States in the Quadruple–Kerr Solution
J. L. Hernández–Pastora, O. V. Manko, V. S. Manko, J. Martín, and E. Ruiz 781

Asymptotic Regimes of Magnetic Bianchi Cosmologies
Joshua T. Horwood and John Wainwright 799

Fermion Particle Production in a Periodic Potential
S. Biswas and I. Chowdhury 825

LETTERS

The Force of Gravity from a Lagrangian Containing Inverse Powers of the Ricci Scalar
M. E. Soussa and R. P. Woodard 855

String Cosmology in Brane World Scenarios
Archan Kumar De, Sisir Bhanja, and Subenoy Chakraborty 863

On the Indication from Pioneer 10/11 Data of an Apparent Anomalous, Weak, Long-Range Acceleration
Yong Gwan Yi 875

Conformal Isometry of the Reissner-Nordström-de Sitter Black Hole
Johan Brännlund 883

Nonlinear Gravitational-Electromagnetic Bending of the Rays of Weak Electromagnetic Waves in the Fields of Pulsars and Magnetars
Irene P. Denisova, Igor V. Krivchenkov, Polina A. Vshivtseva, and Alexander A. Zubrilo 889

MEMORIAL: Hans Stephani
by M. MacCallum 899

General Relativity and Gravitation

Volume 36, Number 5 **May 2004**

CONTENTS

RESEARCH ARTICLES

Are the Peaks in the Cosmic Microwave Background Really Acoustic?
G. Lessner 903

Brane-World Models Emerging from Collisions of Plane Waves in 5*D*
J. Ponce de Leon 923

Gravitational Waves Interacting with a Spinning Charged Particle in the Presence of a Uniform Magnetic Field
D. B. Papadopoulos 949

Gravitomagnetic Effect and Spin-Torsion Coupling
Adellane Araujo Sousa and Jose Madih Maluf 967

Increase of the Number of Detectable Gravitational Waves Signals Due to Gravitational Lensing
M. Arnaud Varvella, M. C. Angonin, and Ph. Tourrenc 983

A Cosmological Model of Holographic Brane Gravity
Piret Kuusk and Margus Saal 1001

A New Algorithm for the Segre Classification of the Trace-Free Ricci Tensor
E. Zakhary and J. Carminati 1015

Eleven Spherically Symmetric Constant Density Solutions with Cosmological Constant
Christian G. Böhmer 1039

REVIEW

Hamiltonian Linearization of the Rest-Frame Instant Form of Tetrad Gravity in a Completely Fixed 3-Orthogonal Gauge: A Radiation Gauge for Background-Independent Gravitational Waves in a Post-Minkowskian Einstein Spacetime
Juri Agresti, Roberto De Pietri, Luca Lusanna, and Luca Martucci 1055

LETTERS

Quantum Entropy of the Garfinkle-Horowitz-Strominger Dilaton Black Hole
Liu Chengzhou, Li Xiang, and Zhao Zheng 1135

The Force Exerting on Cosmic Bodies in a Quaternionic Field
V. Majerník 1143

Path Integral Quantization of 2D-Gravity
Sami I. Muslih 1151

Differential Invariants of the Kerr Vacuum
Kayll Lake 1159

Quantum Nonthermal Radiation of Nonstationary Kerr-Newman-de Sitter Black Holes
M. Hossain Ali 1171

Global Hyperbolicity of Sliced Spaces
Spiros Cotsakis 1183

Embedding Diagrams for the Reissner-Nordström Spacetime
Aseem Paranjape and Naresh Dadhich 1189

Frame Dragging Anomalies for Rotating Bodies
Peter Collas and David Klein 1197

Sagnac Interferometry and Non–Newtonian Gravity
Abel Camacho 1207

Slowly Rotating, Compact Fluid Sources Embedded in Kerr Empty Space-Time
Ron Wiltshire and Paul Messenger 1213

Self-Similar Collapse of Scalar Field with Plane Symmetry
Anzhong Wang, Yumei Wu, and Zhong Chao Wu 1225

BOOK REVIEWS

Tensor Analysis and Nonlinear Tensor Functions. By Yu. I. Dimitrienko
Bertfried Fauser 1237

Gravitation and Cosmology: From the Hubble Radius to the Planck Scale. By Richard L. Amoroso, Geoffrey Hunter, Menas Kafatos, and Jean-Pierre Vigier
Gerhard Lessner 1241

General Relativity and Gravitation

Volume 36, Number 6 **June 2004**

CONTENTS

RESEARCH ARTICLES

Gravitational Collapse in Higher Dimensional Space-Time
Ujjal Debnath and Subenoy Chakraborty 1243

The Energy of the Universe in Teleparallel Gravity
T. Vargas 1255

On a Framework for Generating Nonstatic Solutions of the Einstein Field Equations
K. S. Govinder and M. Govender 1265

Naked Singularities Formation in the Gravitational Collapse of Barotropic Spherical Fluids
Roberto Giambò, Fabio Giannoni, Giulio Magli, and Paolo Piccione 1279

Dirac Fields in 3D de Sitter Spacetime
A. López-Ortega 1299

The Impact of the New Earth Gravity Models on the Measurement of the Lense–Thirring Effect
Lorenzo Iorio and Alberto Morea 1321

Extra Force from an Extra Dimension: Comparison between Brane Theory, Space-Time-Matter Theory, and Other Approaches
J. Ponce de Leon 1335

Regular and Black Hole Skyrmions with Axisymmetry
Nobuyuki Sawado, Noriko Shiiki, Kei-ichi Maeda, and Takashi Torii 1361

Local Existence and Continuation Criterion for Solutions of the Spherically Symmetric Einstein-Vlasov-Maxwell System
P. Noundjeu and N. Noutchegueme 1373

A Charged Rotating Cylindrical Shell
J. Geršl, P. Klepáč, and J. Horský 1399

LETTERS

A Solution of the Weyl–Lanczos Equations for the Schwarzschild Space-Time
Peter O'Donnell 1415

Brane Cosmology with a van der Waals Equation of State
G. M. Kremer 1423

Inflationary Dilatonic de Sitter Universe from Super Yang-Mills Theory Perturbed by Scalars and Spinors
Iver Brevik and John Quiroga 1433

Models of Relativistic Particle with Curvature and Torsion Revisited
Josu Arroyo, Manuel Barros, and Oscar J. Garay 1441

Electromagnetic Mass-Models in General Relativity Reexamined
J. Ponce de Leon 1453

Generating Static Black Holes in Higher Dimensional Space-Times
Emanuel Gallo 1463

Gravitational Thermodynamics of a Vaidya Black Hole
Li Xiang and Y. G. Shen 1473

Statefinder Parameters for Interacting Dark Energy
Winfried Zimdahl and Diego Pavón 1483

A Simple Criterion for Nonrotating Reference Frames
Peter Collas and David Klein 1493

The Petrov Type of the Five-Dimensional Myers-Perry Metric
Pieter-Jan De Smet 1501

ERRATUM 1505

BOOK REVIEW
Gravitation: Following the Prague Inspiration. By O. Semerák, J. Podolský, and M. Žofka (eds.)
Marek A. Abramowicz 1507

General Relativity and Gravitation

Volume 36, Number 7 **July 2004**

CONTENTS

Special Issue: Proceedings UISS-2003
Guest Editors: S. V. Chervon, V. N. Melnikov, and A. A. Starobinsky

Preface
S. V. Chervon, V. N. Melnikov, and A. A. Starobinsky 1509

RESEARCH ARTICLES

Curvature Coupling and Accelerated Expansion of the Universe
Alexander B. Balakin 1513

On Spherically Symmetric Minimally Coupled Brane Worlds
K. A. Bronnikov, S. B. Fadeev, and A. V. Michtchenko 1527

Self-Gravitating String-Like Configurations of Nonlinear Spinor Fields
K. A. Bronnikov, E. N. Chudayeva, and G. N. Shikin 1537

Inflationary Cosmological Models without Restrictions on a Scalar Field Potential
Sergey Chervon 1547

Harmonic Maps as a Subclass of Isometric Embeddings of the Spacetime in Five Dimensions
Sergey Chervon and Carlos Romero 1555

Billiard Representation for Multidimensional Multi-Scalar Cosmological Model with Exponential Potentials
H. Dehnen, V. D. Ivashchuk, and V. N. Melnikov 1563

Flat Friedmann Universe Filled by Dust and Scalar Field with Multiple Exponential Potential
V. R. Gavrilov, V. N. Melnikov, and S. T. Abdyrakhmanov 1579

Composite S-Brane Solutions on the Product of Ricci-Flat Spaces
V. D. Ivashchuk, V. N. Melnikov, and A. B. Selivanov 1593

Effective Connections and Fields Associated with Shear-Free Null Congruences
Vladimir V. Kassandrov and Vladimir N. Trishin 1603

Zero Point Energy of a Massless Scalar Field in the Cosmic String Space-Time
Nail R. Khusnutdinov and Artem R. Khabibullin 1613

Test of the Inverse Square Law through Precession of Orbits
N. I. Kolosnitsyn and V. N. Melnikov 1619

Scalar Perturbations in Inflationary Models Based on the Non-Linear Sigma Model
N. A. Koshelev 1625

Quantum Cosmology with Scalar-Vector and Scalar-Spinor Interactions
V. G. Krechet, G. N. Shikin, and M. L. Fil'chenkov 1641

Cosmological Dynamics of Scalar Field with Non-Minimal Kinetic Term
H. Kröger, G. Melkonyan, and S. G. Rubin 1649

Generalized Exact Cosmologies with Interacting Yang-Mills and Nonlinear Scalar Fields
V. K. Shchigolev and K. Samaroo 1661

Cosmological Evolution of a Ghost Scalar Field
Sergey V. Sushkov and Sung-Won Kim 1671

Photon Decays in the Radiation-Dominated Universe: Scalar Electrodynamics
L. I. Tsaregorodtsev and V. V. Tsaregorodtseva 1679

The Mesofractal Universe Driven by Rayleigh-Lèvy Walks
V. V. Uchaikin 1689

The Scalar Fields with Negative Kinetic Energy, Dark Matter and Dark Energy
V. M. Zhuravlev, D. A. Kornilov, and E. P. Savelova 1719

BOOK REVIEW
Special Relativity and Motions Faster Than Light. By Moses Fayngold
Norbert Dragon 1737

General Relativity and Gravitation

Volume 36, Number 8 **August 2004**

CONTENTS

RESEARCH ARTICLES

Inhomogeneous Cosmologies with Tachyonic Dust as Dark Matter
A. Das and A. DeBenedictis 1741

Modified Gravity with ln R Terms and Cosmic Acceleration
Shin'ichi Nojiri and Sergei D. Odintsov 1765

New Solutions to Einstein's Equations in the Taub Universe and Their Accelerating Stage
Leandro Meléndez and Pablo Chauvet 1781

Vacuum Rank 1 Space-Time Perturbations
Stefan Haesen 1791

Scalar Perturbations of Charged Dilaton Black Holes
Sharmanthie Fernando and Keith Arnold 1805

The Variational Principle and Effective Action for a Spherical Dust Shell
Valentin D. Gladush 1821

Q-Stars in Anti de Sitter Spacetime
Athanasios Prikas 1841

The Hamiltonian of Asymptotically Friedmann-Lemaître-Robertson-Walker Spacetimes
N. Pinto-Neto and P. I. Trajtenberg 1871

Gravitational Collapse of Self-Similar Perfect Fluid in $2 + 1$ Gravity
A. Y. Miguelote, N. A. Tomimura, and Anzhong Wang 1883

Complete Higher Dimensional Global Embedding Structures of Various Black Holes
Soon-Tae Hong 1919

LETTERS

Constraint Propagation in $(N + 1)$-Dimensional Space-Time
Hisa-aki Shinkai and Gen Yoneda 1931

On Tilted Perfect Fluid Bianchi Type VI_0 Self-Similar Models
Pantelis S. Apostolopoulos 1939

Gravitational Potential in the Palatini Formulation of Modified Gravity
Xin-He Meng and Peng Wang 1947

Solutions of All One-Dimensional Wave Equations with Time Independent Potential, and Separable Variables
Marco Ferraris and Alessandro D. A. M. Spallicci 1955

Casimir Stress for Cylindrical Shell in de Sitter Space
M. R. Setare 1965

A Moving Medium Simulation of Schwarzschild Black Hole Optics
Kjell Rosquist 1977

BOOK REVIEW

The Galactic Black Hole: Lectures on General Relativity and Astrophysics. By Heino Falcke and Friedrich W. Hehl
K. S. Virbhadra 1983

General Relativity and Gravitation

Volume 36, Number 9 **September 2004**

CONTENTS

RESEARCH ARTICLES

Some Comments on a Recently Derived Approximated Solution of the Einstein Equations for a Spinning Body with Negligible Mass
Lorenzo Iorio 1987

Ricci Collineations in Perfect Fluid Bianchi V Spacetime
U. Camci and İ. Türkyilmaz 2005

Two-Brane Randall-Sundrum Model in AdS_5 and dS_5
I. Brevik, K. Børkje, and J. P. Morten 2021

Acceleration Field of a Universe Modeled as a Mixture of Scalar and Matter Fields
Gilberto M. Kremer and Daniele S. M. Alves 2039

Maxwell Equations in the Spinning Cosmic String Spacetimes
F. Özdemir and N. Özdemir 2053

Schwarzschild Interior in Conformally Flat Form
Alicia Herrero and Juan Antonio Morales 2063

Geometry of an Accelerated Rotating Disk
J.-F. Pascual-Sánchez, A. San Miguel, and F. Vicente 2075

Time Asymmetry and Chaos in General Relativity
Yves Gaspar 2085

Is There Paradox with Infinite Space?
D. H. Coule 2095

Binary Systems around a Black Hole
Eduardo Guéron and Patricio S. Letelier 2107

LETTERS

Dilatonic Black Hole Entropy without Brick Walls
Zhao Ren and Zhang Sheng-Li 2123

Antisymmetric Tensor Contribution to the Muon $g-2$
Terry Pilling, Richard T. Hammond, and P. F. Kelly 2131

The Energy Density of the Quaternionic Field as Dark Energy in the Universe
V. Majerník 2139

Note on the Luminosity Distance
Edward Malec, Grzegorz Wylężek, and Janusz Karkowski 2151

Exact Solutions for the Interacting Tachyonic–Dark Matter System
Ramón Herrera, Diego Pavón, and Winfried Zimdahl 2161

Normal Forces in Stationary Spacetimes
Richard H. Price 2171

Parametrization of the Kerr-NUT Solution
J. Gariel, G. Marcilhacy, and N. O. Santos 2175

ADDENDUM

Addendum to: Gen. Rel. Grav. 28 (1996) 1161, First Prize Essay for 1996: Neutrino Oscillations and Supernovae
D. V. Ahluwalia-Khalilova 2183

BOOK REVIEW

Exact Solutions of Einstein's Field Equations. By H. Stephani, D. Kramer, M. MacCallum, C. Hoenselaers, and E. Herlt
Zoltán Perjés 2189

General Relativity and Gravitation

Volume 36, Number 10 **October 2004**

CONTENTS

HYPER Special Issue
Guest Editors: C. Borde, C. Lämmerzahl, and E. Rasel

Preface 2193

RESEARCH ARTICLES

HYPER: A Satellite Mission in Fundamental Physics Based on High Precision Atom Interferometry
C. Jentsch, T. Müller, E. M. Rasel, and W. Ertmer 2197

Gravitomagnetic Effects
G. Schäfer 2223

Tidal Gravitational Effects in a Satellite
Ph. Tourrenc, M.-C. Angonin, and X. Ovido 2237

Frame Dragging and Lense-Thirring Effect
Ignazio Ciufolini 2257

HYPER and Gravitational Decoherence
Serge Reynaud, Brahim Lamine, Astrid Lambrecht, Paulo Maia Neto, and Marc-Thierry Jaekel 2271

Sagnac Effect of Gödel's Universe
E. Kajari, R. Walser, W. P. Schleich, and A. Delgado 2289

Microtraps and Atom Chips: Toolboxes for Cold Atom Physics
L. Feenstra, L. M. Andersson, and J. Schmiedmayer 2317

Equivalence Principle Measurements
T. J. Sumner 2331

Testing Relativity with Orbiting Oscillators
Neil Russell 2341

Whispering Gallery Resonators and Tests of Lorentz Invariance
Peter Wolf, Michael E. Tobar, Sébastien Bize, André Clairon, André N. Luiten, and Giorgio Santarelli 2351

OPTIS—An Einstein Mission for Improved Tests of Special and General Relativity
C. Lämmerzahl, I. Ciufolini, H. Dittus, L. Iorio, H. Müller, A. Peters, E. Samain, S. Scheithauer, and S. Schiller 2373

BOOK REVIEW

Gravity: An Introduction to Einstein's General Relativity. By James B. Hartle
Reinhard Meinel 2417

General Relativity and Gravitation

Volume 36, Number 11 **November 2004**

CONTENTS

ESSAY

A Secret Tunnel through the Horizon
Maulik Parikh 2419

RESEARCH ARTICLES

Galactic Metrics
Mark D. Roberts 2423

Back Reaction in Static Einstein Spaces—Change of Entropy
P. I. Kuriakose and V. C. Kuriakose 2433

Kerr–Newman Solution as a Dirac Particle
H. I. Arcos and J. G. Pereira 2441

A Quantum Universe and the Solution to the Cosmological Problems
Arbab I. Arbab 2465

The Gravitating Perfect Fluid-Scalar Field Equations: Quintessence and Tachyonic Matter
A. DeBenedictis, A. Das, and S. Kloster 2481

Aligned Electric and Magnetic Weyl Fields
Joan Josep Ferrando and Juan Antonio Sáez 2497

Discussing again on the Thermal Property of Kinnersley Black Hole Using a New Tortoise Coordinate Transformation
Xin-Qin Gao, Li-E Qiang, Jian-Yang Zhu, and Zheng Zhao 2511

LETTERS

Some Remarks on the Coupling Prescription of Teleparalled Gravity
R. A. Mosna and J. G. Pereira 2525

Quantum Statistical Entropy of d-Dimensional Horowitz–Strominger Black Hole
Zhao Ren, Wu Yue-Qin, and Zhang Sheng-Li 2539

Causality Violating Geodesics in Bonnor's Rotating Dust Metric
Peter Collas and David Klein 2549

Gravitational Waves in the Generalized Chaplygin Gas Model
J. C. Fabris, S. V. B. Gonçalves, and M. S. Santos 2559

ANNOUNCEMENT 2573

General Relativity and Gravitation

Volume 36, Number 12 **December 2004**

CONTENTS

ESSAYS

2nd Award 2004: Probing Gravitational Interactions of Elementary Particles
Jonathan L. Feng, Arvind Rajaraman, and Fumihiro Takayama 2575

3rd Award 2004: Charge Conjugation and Lense-Thirring Effect—A new Asymmetry
D. V. Ahluwalia-Khalilova 2581

The Quantum Gravitational Black Hole Is Neither Black Nor White
T. P. Singh and Cenalo Vaz 2589

Quantum Field Theory Is not Merely Quantum Mechanics Applied to Low Energy Effective Degrees of Freedom
Stefan Hollands and Robert M. Wald 2595

RESEARCH ARTICLES

Moyal Deformations of Gravity via SU(∞) Gauge Theories, Branes and Topological Chern-Simons Matrix Models
Carlos Castro 2605

The Chaotic Mixmaster and the Suppression of Chaos in Scalar–Tensor Cosmologies
Laurent Di Menza and Thierry Lehner 2635

LETTERS

Palatini Formulation of Modified Gravity with Squared Scalar Curvature
Xinhe Meng and Peng Wang 2673

An Einstein-Like Theory of Gravity with a Non-Newtonian Weak-Field Limit
M. Cadoni 2681

GOLDEN OLDIE

Editor's Note: Empty Space-Times Admitting a Three Parameter Group of Motions, by A. H. Taub
M. MacCallum 2689

Empty Space-Times Admitting a Three Parameter Group of Motions
By A. H. Taub 2699

Author Index 2721